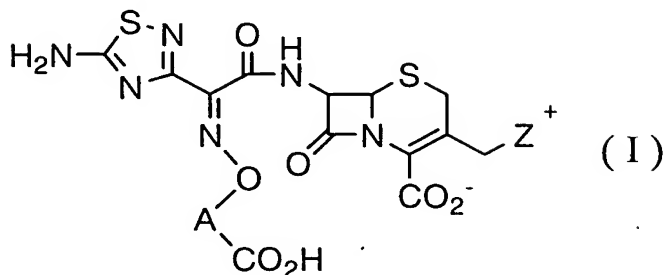


[Document name] Claims

[Claim 1]

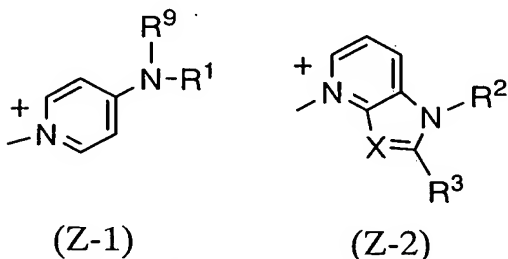
A compound of Formula 1:

[Formula 1]



(wherein A is optionally substituted lower alkylene (substituent: mono- or di- lower alkyl, lower alkylidene, or lower alkylene having two or more carbons); Z⁺ is either of the groups shown below:

[Formula 2]

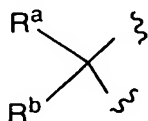


(wherein R¹ and R² are each independently hydrogen, optionally substituted amino lower alkyl, optionally substituted aminocycloalkyl, optionally substituted cyclic amino, or optionally substituted cyclic amino lower alkyl; R⁹ is hydrogen or lower alkyl, or R¹ and R⁹ taken together with an adjacent N atom may form optionally substituted cyclic amino; R³ is hydrogen or amino; X is N or CR⁴ (R⁴ is hydrogen or optionally substituted lower alkyl)), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 2]

A compound according to claim 1, wherein A is a group of Formula 3:

[Formula 3]



(wherein R^a and R^b are each independently hydrogen or lower alkyl,

or taken together form lower alkylidene or lower alkylene having two or more carbons), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 3]

A compound according to claim 1, wherein A is $-C(CH_3)_2-$, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 4]

A compound according to claim 1, wherein R^1 and R^2 are each independently hydrogen, optionally substituted amino lower alkyl (examples of substituent include optionally substituted lower alkyl, hydroxy, amino, aminosulfonyl or cycloalkyl), saturated 4- to 6-membered cyclic amino which may be substituted with lower alkyl or saturated 3- to 6-membered cyclic amino lower alkyl which may be substituted with lower alkyl; R^9 is hydrogen or lower alkyl, or R^1 and R^9 taken together with an adjacent N-atom may form an optionally substituted saturated 4- to 6-membered cyclic amino (substituent: optionally substituted amino or lower alkyl); R^3 is hydrogen or amino; and X is N or CR^4 (R^4 is hydrogen, lower alkyl, or lower alkyl substituted with amino which may be substituted with lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 5]

A compound according to claim 1, wherein R^1 and R^2 are each independently amino lower alkyl which may be substituted with lower alkyl, or saturated 4- to 6-membered cyclic amino which may be substituted with lower alkyl; R^3 is amino; and X is N or CH, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 6]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; R^1 and R^2 are each independently amino lower alkyl which may be substituted with lower alkyl or saturated 4- to 6-membered cyclic amino which may be substituted with lower alkyl; R^3 is hydrogen or amino; and X is N or CR^4 (R^4 is hydrogen, lower alkyl, or lower alkyl substituted with amino which may be substituted with lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 7]

A compound according to claim 1, wherein Z^+ is a group of (Z-1); and R^1 is optionally substituted amino lower alkyl (examples of substituent include optionally substituted lower alkyl, hydroxy, amino, aminosulfonyl or cycloalkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 8]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 is lower alkyl substituted with optionally substituted amino (examples of substituent include optionally substituted lower alkyl, hydroxy, amino, aminosulfonyl or cycloalkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 9]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 is $-(CH_2)_mNHCH_3$ (m is an integer of 1 to 5), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 10]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 is $-(CH_2)_2NHCH_3$, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 11]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 is saturated 4- to 6-membered cyclic amino which may be substituted with lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 12]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 is saturated 3- to 6-membered cyclic amino lower alkyl which may be substituted with lower alkyl, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 13]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-1); and R^1 and R^9 taken together with an adjacent N atom form an optionally substituted saturated 4- to

6-membered cyclic amino (substituent: optionally substituted amino or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 14]

A compound according to claim 1, wherein Z^+ is a group of (Z-2); and R^3 is amino, a pharmaceutically acceptable salt or a solvate thereof.

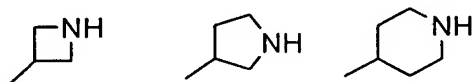
[Claim 15]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); and R^3 is amino, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 16]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); and R^2 is hydrogen, $-(CH_2)_nNHCH_3$ (n is an integer of 1 to 5), $-(CH_2)_pCH(CH_3)NH_2$ (p is an integer of 1 to 5) or either one of the groups shown below:

[Formula 4]



; R^3 is hydrogen or amino; and X is N or CR^4 (R^4 is hydrogen, lower alkyl or lower alkyl substituted with amino which may be substituted with lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 17]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); R^2 is $-(CH_2)_nNHCH_3$ (n is an integer of 1 to 5); R^3 is amino; and X is N, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 18]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); R^2 is $-(CH_2)_3NHCH_3$; R^3 is amino; and X is N, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 19]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); R^2 is saturated 4- to 6-membered

cyclic amino which may be substituted with lower alkyl; R^3 is hydrogen or amino; and X is N or CR^4 (R^4 is hydrogen, or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 20]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); R^2 is saturated 4- to 6-membered cyclic amino which may be substituted with lower alkyl; R^3 is amino; and X is N or CH, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 21]

A compound according to claim 1, wherein A is a group of Formula: $-C(CH_3)_2-$; Z^+ is a group of (Z-2); R^2 is hydrogen; R^3 is hydrogen or amino; and X is CR^4 (R^4 is lower alkyl or lower alkyl substituted with amino which may be substituted with lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

[Claim 22]

A pharmaceutical composition containing a compound according to any one of claims 1 to 21, a pharmaceutically acceptable salt or a solvate thereof.

[Claim 23]

A pharmaceutical composition of claim 22, which is an antibacterial agent.

[Claim 24]

A carboxy and/or amino-protected compound of a compound of any one of claims 1 to 21, a pharmaceutically acceptable salt or a solvate thereof.